a plurality of route processing engines; and

a mechanism that performs a hashing function on at least a portion of network layer information, in the packets transferred to the routing system, to determine an approximately even distribution of the packets to the route processing engines for processing by the engines;

means for determining packets belonging to a same flow;

means for determining the original order of the packets in the same flow from the network layer information of the packets, the network layer information including at least the same source/destination and protocol;

means for preserving the original ordered packet flows by sending each ordered packet flow to a single route processing engine.

2. (thrice amended) The routing system of claim 1, wherein the plurality of means for transferring packets includes at least one uplink connection to an external network and at least one data port adapter connected to an external data interface component, wherein the port adapter converts s input data to a known interface, and the external interface component accepts input data.

11. (thrice amended) A routing system for distributing packets in a network, wherein the packets originate at a source and are returned to a destination, both source and destination external with respect to the routing system, comprising:

a plurality of network interfaces that transfer the packets to a destination and from a source;

a plurality of route processing engines;

a fabric interconnecting said plurality of network interfaces and said plurality of route processing engines;

wherein each of said plurality of network interfaces uses a hashing function to determine a distribution of the packets among said plurality of route processing engines; and

wherein the hashing function is carried out on at least a portion of network layer information in the packets; and

wherein the hashing function determines packets belonging to a same flow;

wherein the hashing function determines the packets' original order from the network layer information including at least the same source/destination and protocol; and

means for preserving the original ordered packet flow by sending the original ordered packet flow to a single route processing engine.

15. (twice amended) The routing system of claim 11, wherein said network interfaces include port adapters, wherein the port adapter converts s input data to a known interface.

16. (twice amended) The routing system of claim 15, wherein said network interfaces include at least one uplink connection to an external network, wherein the port adapter converts s input data to a known interface.

D4 SUB E5 20. (thrice amended) The method of claim 17 , wherein the hashing is computed by logically XORing the addresses, the port, and the protocol type value.

D5 25. (twice amended) The method of claim 17, wherein the at least one ordered packet flow comprises a plurality of ordered packet flows, and the step of hashing is performed such that only a single respective processing engine is selected to process respective packets belonging to a respective ordered packet flow.

SUB E6 29. (amended) The system of claim 26, wherein the hash value is computed by logically XORing the addresses, the ports, and the protocol type value.

D6 30. (amended) The system of claim 26 further comprising:

means for providing a table containing entries for use in selecting the one processing engine; and

means for selecting one entry in the table specified by an index value, the index value being based upon the hash value.